

ESTIMATED SOUND POWER LEVEL OF DIESEL OR GAS RECIPROCATING ENGINE NOISE

1. Engine power rating: _____ hp 2. Engine speed range: under 600 rpm ($A = -5$) 600-1500 rpm ($A = -2$) over 1500 rpm ($A = 0$) 3. Cylinder arrangement: in-line ($C = 0$) V-type ($C = -1$) radial ($C = -1$)
4. Engine fuel: diesel and/or gas ($B = 0$) natural gas only ($B = -3$) 5. Equipped with turbocharger? yes ($T = 6$) no ($T = 0$)
6. Air intake to unmuffled Roots blower? yes ($D = +3$) no or not applicable ($D = 0$)
7. Length of air intake duct, if any: $L_{in} =$ _____ ft. 8. Length of exhaust pipe: $L_{ex} =$ _____ ft.

Octave Frequency Band in Hz								
31	63	125	250	500	1000	2000	4000	8000

Part A. Engine casing noise.

9. Overall PWL from table 2-1 of PPA manual:

$$L_w = \text{Base PWL} + A + B + C + D$$

$$= \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} \text{ Caution: Use correct signs!}$$

$$= \underline{\quad} \text{ dB re } 10^{-12}W$$

10. Octave frequency band adjustments from table 2-2 for engine speed of Item 2 above:
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11. Octave band PWL values (Item 11 = Item 9 - Item 10, in bands)
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Part B. Turbocharged air inlet noise, if applicable.

12. Overall PWL from table 2-3 of PPA manual (if inlet duct has acoustic lining, see Item 15 below)

$$L_w = \text{Base PWL} - L_{in}/6$$

$$= \underline{\quad} - \underline{\quad}$$

$$= \underline{\quad} \text{ dB re } 10^{-12}W$$

13. Octave frequency band adjustments from table 2-3

4	11	13	13	12	9	8	9	17
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14. Octave band PWL values (Item 14 = Item 12 - Item 13, in bands)
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15. Insertion loss of duct lining or muffler in air inlet duct, if applicable. (If duct lining data are used here, eliminate the $L_{in}/6$ term in Item 12 above.)
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16. Octave band PWL radiated from intake end of air inlet duct, if applicable (Item 16 = Item 14 - Item 15)
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Part C. Engine exhaust noise.

17. Overall PWL from table 2-4 of PPA manual, for unmuffled exhaust

$$L_w = \text{Base PWL} - T - L_{ex}/4$$

$$= \underline{\quad} - \underline{\quad} - \underline{\quad}$$

$$= \underline{\quad} \text{ dB re } 10^{-12}W$$

18. Octave frequency band adjustments from table 2-4

5	9	3	7	15	19	25	35	43
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19. Octave band PWL values for unmuffled engine exhaust (Item 19 = Item 17 - Item 18, in bands)
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20. Insertion loss of engine muffler, if applicable, from table 3-2 or manufacturer's data
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21. Octave band PWL radiated from outlet end of muffled exhaust (Item 21 = Item 19 - Item 20)
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